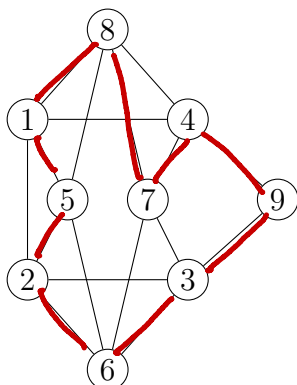


Introduction to Hamiltonian Circuits and Paths

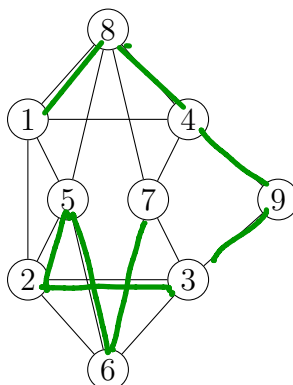
1. A Hamiltonian circuit is a circuit that includes every vertex exactly one time.

2. A Hamiltonian path is a path that includes every vertex exactly one time



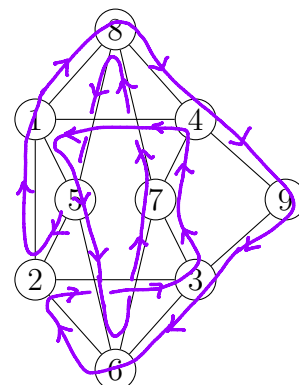
Hamiltonian
circuit

1 8 7 4 9 3 6 2 5 1



Hamiltonian
path

1 8 4 9 3 2 5 6 7



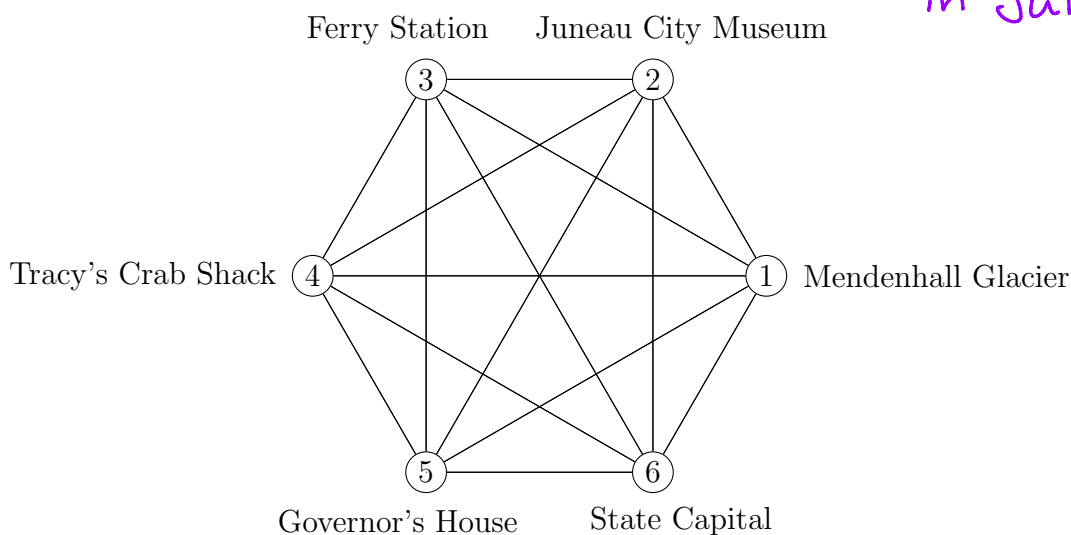
euler circuit
here

↑
also a
Hamiltonian
path!

3. Does the graph above have an Euler circuit? Yes! All vertices have even degree!

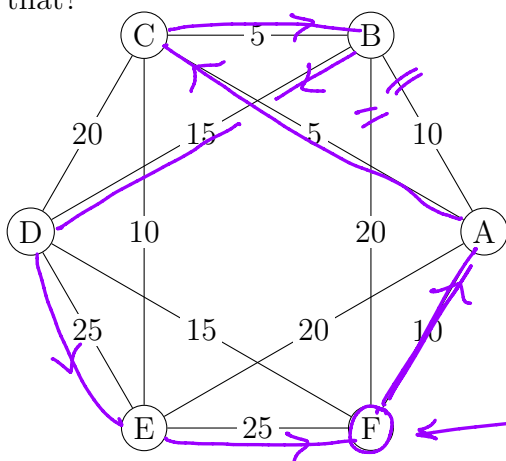
4. What would a Hamiltonian circuit in the graph below represent?

A tour of sights in Juneau!



5. Why might you want to find a Hamiltonian circuit of smallest weight? How might you do that?

It would be the most efficient, in time or money or fuel or...



choose closest available vertex starting at, say F

This algorithm is called "Nearest Neighbor Algorithm" or NNA.